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THE IMPACT OF REGULATORY CONTROLS ON INDUSTRY STRUCTURE:
A STUDY OF THE CAR AND SCOOTER INDUSTRY IN INDIA

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Abstract

This paper studies the historical development of the regulatory process in India and the subsequent effect of regulatory controls on market structure, market performance, and product choice. The major proponents of the infant-industry arguments that subsequently led to tight internal and external (regulatory) barriers were the industrialists. It is seen that under the effect of regulatory controls there was no product innovation in the car industry which was under stricter controls than the scooter industry. There exist characteristics common to both industries. There was a substantial waiting period in both industries between the placement of the order, and the delivery of the good. After the relaxation of the market controls both industries witnessed entry and exit. There was an improvement in product mix and product quality after the relaxation of the controls.

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1. Introduction

This paper studies the historical development of the regulatory process and its effect upon some of the industries in India. The regulatory experience in India is interesting due to its origins. Many factors, working together, are attributable to the regulatory chaos that was eventually erected. It is clear that principles of 'ideology'¹ played a dominant role than fundamental economic principles. The industrialists played an important role in the formulation of domestic policy and were infact supporters of the barriers, internal and external, that were erected.

It is also clear that the industries studied in this paper had no incentive, and did not, invest in Research and Development, and infact produced practically the same product for a period of 30 years. This lack of initiative on the part of the industrialists completely negates the usefulness of the infant industry argument. At the time when the barriers were eased (not completely removed) the incumbent firms lost market share to the new entrants. The quality and variety of the products increased after the easing of the regulatory controls.

This paper is stuctured as follows. First, the evolution of the Indian planning ideology is studied. This is followed with a study of the car and the scooter industry and the specific regulatory regimes prevalent in the two industries. Then the industrial structure prevalent is studied in both the industries. The paper

¹ As is discussed below.

concludes with a study of the gainers and the losers in the Indian regulatory-deregulatory experience and the conclusion.

2. Evolution of the Indian planning ideology

The Indian planning ideology emerged much before India gained independence in 1947. The Congress party sponsored the National Planning Committee (NPC) with Jawaharlal Nehru² as its Chairman. The NPC was formed at the initiative of the national leaders at that time. One thing notable about this committee was that it represented ideas of the Congress party, the provincial governments and the private businesses. Evidence suggests that private business in India took a major role in the formulation of the IDR³ Act^{4,5}.

The intention of the planners, from the start, was to pursue a socialist pattern of society. Nehru was visibly impressed with what he saw in Russia and

² India's first Prime Minister.

³ The Industries Development (and Regulation) Act.

⁴ In 1944, some prominent private industrialists also prepared a plan known as the 'Bombay Plan'. D. Amarchand, Promotion and Control of Private Industry in India, p.46, 1976, Department of Commerce, Annamalai University.

⁵ Nehru (Discovery of India) talking about the policy formulation for India says:
 "...But I was agreeably surprised at the large measure of unanimity achieved by us in spite of the incongruous elements in our committee. The big-business element was the biggest single group, and its outlook on many matters, especially financial and commercial, was definitely conservative.." p. 404.

At another instance Nehru comments that big business joined the NPC as they realized that they could serve their interests better from within the NPC than outside it.

This seems to lend support to the hypotheses presented by Stigler (A theory of Economic Regulation, B.J.E., 1971). Stigler proposed that self interested private groups may pursue regulation in their self interest.

decided that this was the only way to remove income inequalities prevalent in India⁶. The intent was to base planning on equality of income and not by the profit motive. Thus, it was decided to keep the scope of free enterprise severely restricted.⁷

As far as international trade is concerned, the planners avoided being dependent upon international economies. The paranoia can be explained by looking at the Indian experience with the British corporations. Indian industry was systematically decimated because of the cheap imports from England (produced at large scale and much cheaper than the, primarily, hand made Indian goods). As a result, the Indian leaders (at that time⁸) were fearful of the industrial giants⁹. Out of this fear sprouted the planning ideology of the (Indian) leaders. To quote Nehru:

"Political democracy has no meaning if it does not embrace economic democracy. And economic democracy is nothing but socialism." Address to the

⁶ Economic Ideas of Jawaharlal Nehru, Janardan Audichya, 1977.

⁷ "So, though we did not start with a well-defined social theory, our social objectives were clear enough and afforded a common basis. The very essence of this planning was a large measure of regulation and co-ordination. Thus while free enterprise was not ruled out as such, its scope was severely restricted" Nehru, Discovery of India, p.403.

⁸ Nehru (p.403, Discovery of India) says:

"International trade was certainly not excluded, but we were anxious to avoid being drawn into the whirlwind of economic imperialism. We wanted neither to be victims of an imperialist power nor to develop such tendencies ourselves. The first charge on the countries should be to meet the domestic needs of food, raw materials, and manufactured goods. Surplus production would not be dumped abroad but be used for exchange of such commodities as we might require. To base our national economy on export markets might lead to conflicts with the other nations and to sudden upsets when those markets were closed to us."

⁹ "That huge combine, the Imperial Chemical Industries, has been repeatedly favored at the expense of the Indian industry..", Nehru, p.408, Discovery of India.

AICC session, Jaipur-AICC, Economic Review, 9-1, 1964, p.46 (in D. Amarchand, see above).

We thus see that the tight regulatory controls both on Imports and internal production has their roots in India's experience with the British.

2.1 Industrial Regulation

There are two documents that provide the guidelines for industrial development. The first document is the IDR Act and the second document is the Economic Objectives Resolution (EOR). The IDR Act provided the guidelines for industrial development, while EOR re-stated the socialistic objective of the Indian Government.

The IDR Act came into effect on May 8, 1952. As stated in the document, "it lays stress on development of industries and provides for an effective machinery for the purpose". It provided for the registration of existing industrial undertakings and licensing of new industrial undertakings. Sub clause (1) of clause 11 states:

"...no person or authority other than the central government shall, after the commencement of the Act establish any new industrial undertaking, except under and in accordance with the license issued in that behalf by the Central Government, with the previous permission of the Central Government... Substantial expansion of industrial undertakings will also be subject to the same licensing provisions as the new industrial undertakings."

All undertakings were required to obtain a license, either to expand capacity or to enter the market.

The industries to be regulated were placed under two categories, Schedule A and Schedule-B (Table 2.7). The industries under Schedule A were the exclusive responsibility of the state, while schedule B industries would be progressively state owned. However, the State's efforts in the industries in Schedule B were expected to be supplemented by private enterprise. Future development of the industries falling outside these schedules was (in general) left to the initiative and enterprise of the private sector.

The IDR Act focussed attention on pricing. The right prices for planning purposes were defined as:

"...those that under all existing conditions, including full range of government policies, would give entrepreneurs and, more generally, producers, traders and consumers and savers incentives to act according to a particular development plan... Planning will be realistic when prices conform to the expectations of the planners."¹⁰

The prices of the products related to the scheduled industries came under Section 15 of the IDR Act.

The IDR Act also provided for overseeing the price or the quality of the good. Prices could be further controlled by declaring goods as essential commodities under the Essential Commodities Act (ECA). The ECA provided for the control of production, supply, and distribution in certain commodities, declared as 'essential' under Sec. 2(a) of the Act, in the public interest.

¹⁰ Gunnar Myrdal, *Asian Drama*, Vol. III, p.2037, in D.Amarchand (1976).

We thus see that the IDR Act provided the government broad powers to interfere in the functioning of any industry. It should be noted that, in spite of the demarcation (for scheduled industries), the state could undertake industrial production in any aspect of the economy.

2.1.1 Modifications to the IDR Act

There were several modifications to the IDR Act (of 1952). The major modifications were made in 1956¹¹, 1970, 1981 and 1984.¹²

The first major change in the industrial policy came in 1981 where 29 medium sector industries were allowed fuller utilization of installed capacities. Diversification was also allowed in passenger cars and power driven two-wheeler industry. An undertaking could diversify within its overall licensed capacity. The second major change came about in 1984. Here the government decided to exempt entrepreneurs of medium sized firms from the normal industrial procedure to enable them to set up industrial capacities based on indigenous equipment and local raw materials and, to utilize to a fuller extent the existing installed capacities.¹³

¹¹ In 1955-1956 the Parliament accepted a socialist pattern of society as the objective. Thus a fresh statement of the industrial policy was necessitated to conform to the socialist objectives and a fresh statement of the policy was thus announced on April 30, 1956. This policy did not deviate much from the IDR Act (1952).

¹² Most of these changes involved changing of the laws regarding licensing, recognition of capacities (in excess of licensed capacities), diversification (in output), capacity utilization and automatic expansion (annually or over a period of five years) of current facilities. This Act has since been further revised.

¹³ 24 medium sized industries came under this scheme.

Automatic growth was allowed to 24 groups of industries which are open for larger industrial houses and foreign concerns along with other applicants and, 15 export oriented engineering industries.¹⁴ To be eligible for this expansion the undertaking should not be a dominant unit in the particular line of manufacture within the meaning of the MRTP (Monopolies and Restrictive Trade Practices) Act.¹⁵

Another modification in the licensing policy was that the components sector was delicensed (except for the firms coming under FERA (Foreign Exchange Regulatory Act) and the MRTP Act).

The second document, the Economic Objective Resolution was passed by the parliament in December, 1954. The resolution declared a socialistic pattern of society as the primary objective of the country. It states:

¹⁴ These were allowed to grow at the rate of 5% per annum or upto a ceiling of 25% in five years in one or more steps over their licensed capacity provided the item was not reserved for Small Scale Industries or the Public Sector. The maximum capacity achieved over the last five years (over the licensed capacity) was recognized by the government.

¹⁵ The recognition of installed capacities in excess of licensed capacities had a peculiar feature to it. That is, this scheme was only applicable to the industries where the expansion of a firm does not lead to dominance in that industry. I think a Catch-22 situation exists here. That is, through licensing, the government has created market concentration and as a result, if capacity expansion leads to a dominance of a firm, an incumbent firm would find it difficult to be granted the privilege to expand its capacity. This seems to be a big hurdle if economies in production are to be realized. This tradeoff between economic efficiency and market is not recognized in any of the documents I have looked at or in the World Bank document (see above). We see that there exists a self defeating clause which would make the realization of economies of scale difficult. The car industry would be specifically affected where the incumbent firms were operating well below the MES. However, it is not clear whether the automobile industry made any attempt to expand capacity which was not allowed under this provision of the IDR Act.

Also, in cases where an industry was not allowed to expand as it already had a semi-monopoly, controlled prices were worked out to provide for replacement costs only.

"the basic criterion for determining lines of advance must not be private profit, but social gain." (p. 50, D. Amarchand)

We see that both of these documents were influenced by Nehru's thinking. That is, to achieve the socialistic economic objectives, private industry should be tightly regulated.

2.1.2. The MRTP Act

The MRTP Act was instituted in 1969. This Act imposes severe restrictions upon the growth of large industrial houses.¹⁶ The Act could be broadly divided into two parts. The first part dealing with concentration¹⁷ and the second, dealing with restrictive trade practices. The concepts of 'monopoly' and 'concentration of wealth' were not defined till 1970. In 1970 official interpretation

¹⁶ The bias in India against large private industrial houses is evident from this quote:

"....unlike the Americans, Europeans, and Japanese, we do not worship giant private enterprises as guardians of modern civilization and instruments of national power. We only fear them and promote their growth as inevitable accompaniments of developments." R. K. Hazari, (Rapporteur), Indian Economic Conference, Monopolies and their regulation in India, p. viii, in D. Amarchand (1976).

¹⁷ Concentration of economic power vis-a-vis a monopoly was sought to be controlled by:

- (i) Providing under Sec. 21 a procedure for seeking permission from the Central Government for expansion of the undertaking.
- (ii) Restricting establishment of a new undertaking without the permission of the Central Government.
- (iii) Prohibiting mergers and amalgamations without the approval of the Central Government. (Sec. 23)

These provisions applied to undertakings which have individually or along with interconnected undertakings assets of the value of no less than Rs. 20 crores and dominant undertakings which produce, supply or otherwise control not less than one-third of the total goods that are produced, supplied or distributed in the country. An undertaking to which these provisions apply is required to register with the Government under Sec. 26. D. Amarchand (1976).

was given to these terms. From the point of licensing, concentration of wealth is referred to in terms of large industrial houses. Large industrial houses were defined as a single unit or a group with assets exceeding Rs. 100¹⁸ crores. Also, all industrial houses with assets of over Rs. 100 crores came under the MRTP Act. The definition of monopoly is not clear and the Act lays emphasis on avoidance (not abolition) of monopoly and prevention of concentration of wealth. To clarify some of the issues within the MRTP Act the Monopolies Enquiry Commission was set up and it made some recommendations. First, it measured monopoly in terms of concentration of production and sale or, sale and concentration of economic power in terms of industrial wealth. Second, it recommended the establishment of a permanent MRTP Commission. These recommendations were incorporated into the MRTP Act which came into force from June, 1970.

The MRTP Act defines industry dominance in terms of the licensed capacity (of the undertaking) and the proportion of the goods supplied by the undertaking. That is, if the licensed capacity of an undertaking, including interconnected undertakings, is one-fourth of the total licensed capacity than the undertaking is considered "dominant". If the total amount of goods supplied by the undertaking, including interconnected subsidiaries, is greater than one-third of the

¹⁸ MRTP (Amendment) Act 1982, Chapter III, part A.

total goods of any description that are produced, supplied or distributed in India, then it is considered dominant.¹⁹

2.1.3. Control over the capital market

The capital market in India was controlled too. Control over the issues of capital were enforced as early as 1943 through the CIC (Capital Issues Control) Act²⁰. The CIC Act was made a permanent legislation in 1956.²¹ We find that the government had imposed constraints on raising capital.

"Control over capital issues was first issued in 1943 (the CIC Act), largely as a war-time temporary measure In 1956, the Act was made a permanent legislation," to ensure, as far as possible, that investible funds did not find an outlet for investment in non-essential projects and to prevent them from being invested in a manner which ran counter to the policy of the government".²²

According to the Act, a consent from the Controller of Capital issues is necessary in all cases where a company wants to raise capital above a certain

¹⁹ MRTP Act, *ibid*.

²⁰ This was due to the fact that the British had a selfish motive in not letting the Indian capital market develop. A well development capital market in India would reduce India's dependence upon the British. Subsequently that would weaken the economic control over India.

²¹ It is surprising that the Indian government (post independence) carried this legislation through. As the lack of a fully developed capital market is one of the reasons why India could not develop during the British rule.

²² Finance Minister's speech while introducing the Bill in the Lok Sabha, Lok Sabha Debates, Vol. I, 1952, p. 584, in D. Amarchand (1976).

exempted limit. The Act applies to raising of capital by issue of securities, loans or even by creating a charge or lien on assets of the company if they exceed the exemption limit in a particular year.

It was later realized that the stringent provisions of the Act did not serve any purpose. Thus, in November, 1966 certain changes were announced. Under the provision non government public limited companies can issue capital by obtaining a 'no-objection' certificate which will be issued within 30 days of the date of receipt of the application, provided, the application conforms to certain rules.²³ After this the procedure was slightly altered and instead of a 'no-objection' certificate, the applicants following the prescribed rules were allowed to raise capital on receipt of 'acknowledgement of proposal'. Further, to conform to the

²³ The operational guidelines for the issue of consents are:

- (i) gross over-capitalization or under-capitalization are discouraged;
- (ii) ratio between debt and equity is not normally allowed to go beyond 1:2;
- (iii) ratio between preference and equity share capital is considered normal at 1:4 though a higher ratio of 1:3 may be agreed upon in exceptional cases;
- (iv) unduly high rates of dividend on preference shares and interest rates on debentures are discouraged though no rigid limits are set;
- (v) in cases of 'right issues', a condition is stipulated that while making an offer, the company should simultaneously offer to all holders of rights an opportunity for additional shares and that if rights are not taken up, the balance left over should be distributed among applicants for additional shares;
- (vi) in cases of bonus shares, the issue is made out of free reserves built from genuine profits and not made in lieu of dividends; not more than two bonus issues will be allowed to a company over a period of five years; there should be a time lag of at least 18 months between two bonus issues and that after the bonus issue, a total amount of not less than 33.3% of the increased paid-up capital is left in the residual reserves;
- (vii) with a view to ensure that promoters also should subscribe a minimum amount in newly floated companies a new Rule has been added in 1966 according to which the promoters should subscribe not less than 15% in an issue up to Rs. 1 crore and 10% in an issue exceeding Rs. 2 crore.

D. Amarchand (1976).

MRTP Act, all companies registered under Section 26 of the MRTP Act have been disqualified from this exemption (with effect from October 1971). These companies need to get prior clearance under the MRTP Act before applying for a 'consent' under the Capital Issues Act.²⁴ 'An appraisal of the working of the Act reveals that it has been very liberal in permitting capital issues.'²⁵

3. The Regulatory Framework

To study the effect of the imposition and the removal of regulatory controls upon the car and the scooter industry it is desirable to first look at the historical development of the regulatory framework in these industries. Then the change in industry structure is briefly. This is followed by an analysis of how the regulatory framework could have affected the industry structure, prices and, product quality.

3.1. Car Industry

The car industry was regulated from its inception. Binding price ceilings and quantity controls were imposed upon the car industry from the start. Price controls were removed in 1975²⁶. Quantity controls applied to the car industry until the late 1980's.^{27,28} The car industry was under the provision of the IDR Act

²⁴ D. Amarchand (1976), p.126.

²⁵ D. Amarchand (1976), p.126.

²⁶ After one of the manufacturers Premier Automobiles Limited contested the price controls in the market. Imprint, Nov. 1984, p.41.

²⁷ At present the government thinks that the existing licensed capacity is sufficient to meet the current demand.

²⁸ Guidelines to Industries, Part II, Govt. of India, 1989.

which provided for monitoring of the prices. If the government felt that the pricing policy of an industry is non optimal, it may interfere under the authority provided to it under Clause 15 of the IDR Act.²⁹

3.2. Scooter Industry

The scooter industry had also been regulated (both binding price ceiling and quantity restrictions) from its inception. Price controls for the scooter industry were removed in 1975. Quantity controls were substantially reduced in the early 1980's and were virtually non-existent now. The government was liberal with the issue of licenses to the scooter industry. The reason for the liberal attitude was the socialistic objective as is stated in the Indian constitution. Under the socialistic objective cars were interpreted as being a luxury and scooters a necessity. Thus, the government policy towards the scooter manufactureres was tolerant from the start. Pesently the licensed capacity of the scooter industry is several times the

²⁹ Section 15 of the IDR Act states:

"... This Act empowers the government under clause 15 to cause investigation to be made into scheduled industries or undertakings where the Central Government is of the opinion that there has been or likely to be a substantial fall in the volume of production without justification, or a marked deterioration in the quality of any article or class of articles produced which can be avoided, or a rise in their price for which there is no justification, or where an industrial undertaking is being managed in a manner likely to cause serious injury or damage to the interests of the consumers or it is necessary to take such action in national interest".

present demand for scooters.³⁰ The scooter industry is constrained neither by price or by quantity restrictions.

4. Industry Structure

4.1. Car Industry

The early entrants into the car industry were Hindustan Motors (HM) (in 1942) and Premier Automobiles (PAL), in 1944. HM started 'production' in 1948 by assembling vehicles and PAL started production in 1947. In 1953 there were 12 firms producing (or assembling) cars and commercial vehicles.³¹ Most of these firms assembled units since only a few had a phased manufacturing program. At this stage the government decided to look into the functioning of the automobile sector. The Tariff Commission (1953) recommended that only companies with manufacturing capabilities should be allowed to operate. As a result several companies decided to stop assembly operations in India.³² The government recognized the manufacturing programs of only four firms, namely, Hindustan Motors Limited (HML), Premier Automobiles Limited (PAL), Automotive Products of India Ltd. (APIL) and Ashok Motors (AM)³³. Of these four, HML

³⁰ The licensed capacity of BAL and its subsidiary, MSL, is sufficient to meet the current demand.

³¹ Tariff Commission Report, 1953.

³² The Ford Motor Company and General Motors decided to leave as they considered the demand (in India) to be too small to set up manufacturing facilities in India.

³³ Ashok Motors manufactured commercial vehicles.

and PAL had a manufacturing program for cars while AM assembled Austin cars. APIL was not able to pursue its manufacturing program as a result of which the government withdrew its approval. Thus, at the early stages (as of 1953) in the development of the car industry there were two car manufacturers. Of the earliest entrants in the car industry three firms, HML, PAL and SMPIL, existed prior to 1953. Of these three HML and PAL had already started a manufacturing program while SMPIL³⁴ assembled car units. At this stage the two dominant³⁵ units were HML and PAL while, SMPIL was not a major contender³⁶.

The car industry saw no entry until the late 1970's. In early 1970 Maruti (Private Limited)³⁷ entered the car industry with a small three-wheeled car. The second entrant was SAL (in 1976) and the third entrant was Maruti Udyog Limited (MUL) (nationalised in 1980 and started production in 1983).³⁸ The initial intent of MUL was to manufacture a car (a small car) within the reach of the common man.

³⁴ Standard Motors Product of India Limited.

³⁵ A firm is referred to as dominant on the basis of its market share.

³⁶ SMPIL had market shares similar to PAL from 1950 till 1954.

³⁷ Maruti (initially) was a private limited company started by Sanjay Gandhi (son of (late) Mrs. Indira Gandhi). The car was not well accepted and the company stopped production. Maruti was nationalized (in 1980) after the death of Sanjay Gandhi (in a plane crash).

³⁸ "In the 1956 IPR automobiles (excluding road transport services) were not classified under either Schedule A or Schedule B industries - which meant that the future development of the automobile industry would be left, in general, to the initiative and enterprise of the private sector." Kathuria, S (1987).

It is interesting that the government decided to enter the car industry. As, in principle (according to the IPR resolution of 1956) the government had decided not to enter the car industry.

A technological collaboration was set up with Suzuki of Japan to manufacture small (796cc) cars. A large number of bookings were made, in-fact in 1990 MUL was still meeting bookings made in 1986. Maruti has since introduced a new, slightly larger (1000 cc), car aimed at competing with the car manufactured by PAL. Meanwhile, SMPIL had always been in the picture, though barely noticeable.

Between 1950-1953 (data on car industry starts from 1950) production in the car industry increased by 12.2% (from 2221 to 2492). Between 1953 and 1970, car production increased by a relatively large amount, from 2492 cars in 1953 to 35205 cars in 1970 (an increase of 1412%). However, the car market was dominated by two major car makers, HML and PAL, while the third incumbent (SMPI) commanded a measly 1.2% of the market (see table-2.3). SMPI's market share declined considerably from 12.3% in 1950 to 1.2% in 1970. (One should point out that while HML and PAL sold larger cars, SMPI manufactured a smaller car. SMPI was not competing in the same market as the other two car makers.)

In 1990 the Indian car industry had five incumbents, namely, HML, PAL, SMPIL, MUL and SAL³⁹. Capacity utilization in the car industry is quite high, around 80%. The production in 1987 was 148,495. For individual market shares see table-2.1.

³⁹ At this stage there are a large number of incumbents, both, domestic and foreign.

4.2. Scooter Industry

The scooter industry started production in 1955. In 1990 it had seven incumbents. Over time it has witnessed a total of sixteen incumbents.⁴⁰ API (Automotive Products of India) was the first entrant in the Indian scooter industry. It started production in 1955. API was followed by BAL (Bajaj Auto Limited) in 1960. Over time the scooter industry witnessed several changes and saw entry and exit by several firms.

The total number of licensed⁴¹ producers in the scooter industry, as of 1989, is seventeen (entrants are listed chronologically in Table-2.2). Many of these, had licenses to produce very small and, economically un-feasible amounts of scooters.⁴²

⁴⁰ Possibly more, the data sources list small incumbents as 'others'. I have been able to locate only sixteen 'active' (i.e, active at one time or another) producers between 1955-1989.

⁴¹ Licensed producers does not imply that they have set up production facilities. Seventeen producers are listed in the yearly booklet brought out by Automotive Component Manufacturers Association (ACMA). However, looking at the production figures we see that the number of active producers, as of 1987, is seven.

Licensed capacities may differ from installed capacity, in that installed capacity should not exceed licensed capacity.

⁴² The minimum economic scale for scooters is around 250,000 units. Some of the licenses are for a couple of thousand units. One of the possible reasons is that these licenses could be given under the government's small scale industry policy. As a small scale unit, functioning in backward areas, obtaining licenses is extremely easy. This could have resulted in the issue of (several) licenses to these units.

One interesting feature of the scooter industry is the utilization of licensed capacity. The ratio of output to licensed capacity was 40% in 1987.⁴³ Interestingly, BAL (with its subsidiary Maharashtra Scooters Limited (MSL)) has sufficient licensed capacity to meet the industries current total output. Of the incumbents (as of 1990) BAL was the largest, followed by Lohia Motors Limited (LML), Kinetic Honda (KH) and, MSL.

Looking at the technology in the scooter industry we see that technologically the industry was progressive. There exists a large choice between products and product diversification exists (at least) for the large manufacturers. Product diversification was facilitated by the government's policy of allowing '*broad banding*' in the car and the scooter industry. Under this policy producers can use the current installed capacity to produce differentiated products. Technological collaborations existed with Honda Motor Company and Piaggio of Japan and Italy, respectively. These companies are competing with brands manufactured and developed in India.⁴⁴

The scooter industry has seven active incumbents. Only one manufacturer, BAL, enjoyed a waiting list for the delivery of its vehicles. The industry had three

⁴³ Very low in comparison to the car industry where it is around 80%. Also, licensed capacity does not mean that the capacity is also installed. Licensed capacity is always greater than or equal to the installed capacity.

⁴⁴ Piaggio had a production agreement with BAL. This agreement expired in the 70's and has since not been renewed.

large firms and several fringe manufacturers. The environment was competitive among the three dominant firms and product diversification exists. The industry structure has changed substantially (from the initial two incumbents to the present seven).

5. Effect Upon Technology Used

This section does not give a detailed analysis of the technological structure of the individual firm. The on technology choice of regulatory controls is studied. Two factors that can affect the choice of technology of the car and the scooter industry are quotas and the tax structure. Tax structure seems to affect the choice of technology directly, while the effect of the quotas can be traced to the choice of the available technology due to the quantity restriction. That is, firms may in-fact choose inefficient technology as the quota limits the firms' choices in terms of exploiting economies of scale. Thus, high cost technologies may be adopted by the firms.

The tax structure prevalent before the reforms was cascading. Intermediate goods were being taxed at every stage of production. As a result the car manufacturers were vertically integrated (to avoid being taxed at each stage of production⁴⁵). The manufacturers were unable to use their available capital in the most efficient manner. For example, India had an under-developed capital market. As a result firms did not have access to capital. Thus, the limited resources

⁴⁵ Only between firms' sales were taxed and not within firm transfers.

available were not efficiently used. The tax structure has subsequently been modified. The new tax structure is called MODVAT (Modified Value Added Tax). The impact of MODVAT is evident as recently there has been an increase in the spare parts manufacturers (sub contracting with the manufacturers).

The effect of quotas upon the capital structure depends upon the choice of the available technology and the competition prevalent in the market. That is, quotas may limit one to a given plant size and not enable one to reap economies of scale. The minimum economic scale (MES) for the car industry is 50,000 units and 250,000 for the scooter industry. Also, the lack of competition (quotas blocking entry) may take away the incentive to improve the existing technology. We will address these questions while looking at the impact of the regulatory controls upon the car and scooter industry.

5.1. Car Industry

The car industry started production with technological collaborations with foreign manufacturers. HML collaborated with Morris and PAL with Fiat. They had no in built research and development (R&D) and, the Indian economy was closed to technological imports (at the time of independence). Thus, the car makers had no choice but to upgrade the technology they inherited. One can say that price controls (effective until 1975) may have limited the amount of capital available to the manufacturers and as a result no in house R&D was attempted. However, one sees that even after the controls were removed (in 1976) no serious

attempt was made by the manufacturers to set up R&D facilities. One tends to conclude that the intent to set up R&D facilities on the part of the manufacturers was not there.

We also see that the MES for the car industry is 250,000 units per year.⁴⁶ The total output of the car makers was well under 250,000 (see table-2.3 on sales) until 1983. The willingness to expand capacity did not seem to exist as we notice that the ratio of sales to licensed capacity (for the years the data is available) is around 0.5. That is, the output was nearly one-half that of the licensed capacity. During this time the car makers commanded a waiting time for delivery of around three years. Thus sales equal output in every year until for manufacturers commanding a waiting list.

One reason the manufacturers did not expand capacity may have been due to the lack of competition. It is worthwhile to note that explicit price controls were removed in 1975. Even after the removal of these market one sees that the manufacturers commanded a waiting period before delivery. Even though, between 1974 and 1975 prices increased by 33% for HML and 30% for PAL, the price increase was not sufficient to remove the delivery lag.

Thus, that tight regulation (no domestic or foreign competition) may have resulted in a market with outdated and inefficient technology. The choice of the

⁴⁶ Karmokolias, Y, International Finance Corporation, Discussion Paper no.7, 1989.

technology was not efficient and no subsequent improvements were made due to the lack of competition. This argument is supported by the fact that the car manufacturers decided to upgrade technology and expand capacity only after entry occurred in the car market.

5.2. Scooter Industry

The scooter industry faced more favorable conditions than did the car industry. Both the manufacturers, BAL and API, had technological collaborations with Italian manufacturers. Quotas affected the choice of capacity (or capital) by the scooter manufacturers. That is, capacity was not expanded and a waiting list (two to three years) was maintained by the manufacturers.⁴⁷ However, soon after the quotas were relaxed and the market saw substantial entry one notices that BAL expanded capacity in response to the entry of other firms.

The scooter industry updated its technology through indigenous R&D. API was unable to keep pace with the rapidly changing market and eventually stopped production. In the scooter industry quotas affected the choice of technology more than anything else. Technologically, the scooter industry did better than the car industry in that indigenous technology was developed.

6. The Gainers and the Losers

⁴⁷ The reason for maintaining the waiting list may be the same as was for the car manufacturers, that is, waiting lists were a buffer against competition.

The problem faced here is how do we identify gainers and losers? To study the gainers and the losers from the regulatory process we first need to identify the factors that provide to us an indicator of, how one gains or loses? Of course, a producers gain cannot be directly construed as a consumers loss in a dynamic environment. Thus we will identify specific factors that will serve as indicators in our analysis.

A consumer is worse off if it does not get the benefit from market competition, from the choice of goods, from good quality products, and from the quantity of the goods supplied to it (that is, whether or not there exists (existed) a prolonged shortage of the good in question). For the producers, a producer benefits from barriers to entry (that it may create, have created, for its own benefit), shows no inclination to adopt new technologies, gains through an increase in the concentration of wealth, and does not invest in R&D (which it would have, with market competition). In the following analysis the gainers and the losers are studied, before and after, the imposition and the removal of the regulatory controls.

6.1. Before the Removal of Market Controls

6.1.1. The Consumers in the Car and the Scooter Industry

The consumers were definitely worse off when the market controls were in effect. Below we will look at the car and the scooter industry separately.

Car Industry:

In the car market the quota restrictions effectively blocked entry. As a result there was no market competition to stir the incumbent producers into activity. This is highlighted by the fact that in the car industry, until the removal of the market controls, no effort was made to upgrade the models the manufacturers had inherited from Morris (50's technology) and Fiat (early 60's technology) (besides cosmetic changes). The car market had (only) two major incumbents (with a periphery of bungling entrants)⁴⁸. Each producer had only one model to offer (each model had different categories because of the available options). Until the market controls were eased we see that consumers in the car market were limited to a choice of only two models. As far as the product quality is concerned it would suffice to say that technologically the Indian car industry was several decades behind the international standards. Also, the consumer's demand was not being satisfied by the producers. There existed a waiting-list⁴⁹ for several years before the car was delivered to the consumers. The excess demand created a parallel market in the car industry (quasi-rents were being extracted).⁵⁰ Only after the easing of these market controls one saw a virtual elimination of the excess demand for PAL and HML.

⁴⁸ These were peripheral producers who shared an extremely small amount of the small market (see table-2.3).

⁴⁹ A waiting list is defined when current demand (the number of units registered by buyers with an intent to buy) is met at a future date.

⁵⁰ Having booked a car was considered a sound investment as the premiums could be as high 40% of the car's selling price.

The market controls definitely made the consumers worse off. The consumers were limited to a choice of two (antiquated) car models, there was practically no market competition (the incumbent producers catered to different subsections of the car market, HAL producing the larger car while PAL produced the smaller car) and, there was insufficient supply in the car market (resulting in quasi-rents). Overall, we see that consumers in the car industry did not gain because of the market controls.

Scooter Industry:

The scenario in the scooter industry was relatively healthy (compared to the car industry). One effect of the market controls was quite clear, that is, the market controls limited entry into the car market (see table-2.5 for list of incumbents). There existed two major producers (BAL and API) and the other scooter manufacturers commanded a small portion of the market (BAL and API dominated the market for three decades). We see that there was some entry after the price controls were removed in the scooter industry (1975), however, most of the entrants left the market (see table-2.4). As the government's attitude towards the scooter industry was more liberal (than the car industry) the scooter industry saw more competition, however, the majority of the competition came after the market controls were relaxed. Looking at product, the scooter industry had more to offer, BAL had several scooter models and API had two models to offer. Thus, the consumers in the scooter market had 'some' product choice. As far as the quality of

the scooters was concerned we see that BAL produced scooters of good quality while API produced scooters of slightly lower quality⁵¹. (However, none of the scooters were of extremely bad quality.) As far as consumer demand being met, we see that as long as the market controls remained in effect there existed a lag before the scooters were delivered (the lag varied from two to four years depending upon the brand and the make). This (the lag), resulted in the creation of a parallel market where the scooters commanded a premium (the amount one would pay over and above the scooter price, essentially, quasi rent).

The consumers in the scooter market had 'some' product choice and the product quality was 'tolerable'. The consumers were worse off due to the existence of excess demand, and the consequent quasi-rents, in the scooter market.

6.1.2. The Producers in the Car and the Scooter Industry

The producers, both in the car and the scooter industry, were shielded from competition for nearly three decades. The government being more stringent about granting licenses to the car manufacturers created a market that had only two major producers for a long period of time. The scooter industry saw more producers after the price controls were lifted (1975). However, most of the entrants exited the market soon after (see table-2.4).

⁵¹ It hard to find mesurable observables for 'quality'. It is assumed that quality is observable in the sense that everyone agrees that one quality is better than another.

It is useful to identify some of the factors that may provide an indication of whether the car and the scooter producers benefitted from the imposition of the market controls. Some of the factors that we can take as an indicators of benefitting from the market controls are, lack of competition, increase in concentration of wealth, attempts at pre-emption and non implementation of licensed capacity (buying licenses to pre-empt entry into the market) and, lack of R&D (which may follow from lack of competition

Car Industry:

The government was quite strict in giving licenses to the car industry. Thus, the car industry saw only two major incumbents for a long period of time. These two (major) incumbents, HAL and PAL, catered to two different sections of the market. As a result of the government policy (on quotas to the car industry) the car manufacturers saw no competition until the early eighties. The result, no effort was made to innovate and develop better quality products. Until the entry of MUL the incumbent car manufacturers were producing cars with obsolete technology. It is obvious that an effort to innovate was not made as no competition was forthcoming. Thus the lack of competition definitely benefitted the car industry (the car manufacturers would not have been able to sustain with a similar lackadaisical attitude if the market were competitive).

As far as concentration of wealth is concerned we see that the car producers, being the two major incumbents, shared the benefits of the car market

between themselves. One must also point out that studies on the effect of licensing on concentration of wealth showed that the government plans (Five Year Plans) benefitted many top industrial houses of the country.⁵²

Scooter Industry:

We see that the scooter industry had two dominant producers, BAL and API, for a long period of time. However, the product quality in the scooter industry, especially BAL, was good. The manufacturers in the scooter industry profited after the removal of the price controls. The scooter market was more competitive than the car market. The scooter manufacturers improved product quality (probably because of the governments 'soft' policy towards the scooter industry which made entry more probable than for the car industry) and consistently sold good quality products.

As far as the incumbents benefiting from the government controls, one can see that the two major incumbents (BAL and API) commanded 80-90% of the market share (the Indian scooter market has expanded consistently). Thus, licensing definitely helped the incumbents increase, or maintain, their market share. One sees a noticeable shift in the market shares (on the basis of sales) after the easing of the quantity restrictions (see table-2.4).

⁵² D. Amarchand, *ibid.*

As far as preemption is concerned it is not easy to find specific instances (of pre-emption) or non-implementation of licenses by the car or the scooter industry. However, looking at the overall trend one sees that of the 10,016 licenses issued during 1955-56, 6181 were implemented in time, 672 were partially implemented, and 1732 were surrendered or revoked by the licensing authority (information was not available on 148 licenses). The large industrial sector implemented about 72% of the licenses granted to it, 16% were revoked or surrendered and, 12% were not implemented.⁵³

Looking at pre-emption we see that (from the information available about 933 cases, where large industrial houses accounted for 323 licenses). Of these (933) licenses 130 were surrendered, or revoked, within two years of issue, 85 in three years, 44 in four years and, 64 in more than four years.⁵⁴ Thus, preemption was being used in the industry and the incumbent was able to deter entry in a market and dominate it.

One can see that the producers in the car industry gained from the lack of competition. As a result we see that minimal effort was made towards R&D and, the consumers were supplied with goods that were consistently of poor quality (decades behind the international quality).

⁵³ *ibid.*

⁵⁴ *ibid.*

Looking at the scooter industry we see that because of licensing the incumbent producers commanded a large share of a growing market. The product was of average to good quality, however, the consumers suffered as they had to wait for the delivery of the good.

6.2. After Removal of Regulatory Controls

6.2.1. The Consumers in the Car and the Scooter Industry

Car Industry:

After the removal of the market controls one sees that the consumers definitely benefitted from the easing of the market controls. After the easing of the quantity restrictions there was entry into the market (the two major entrants being MUL and SMPIL). In a couple of years MUL commanded 60% of the market share (see table-2.3). (Earlier consumers had to wait two to three years for the delivery of cars made by HML and PAL. In 1989 scooters be obtained with no delivery lags.) As a result it is seen that both, HML and PAL, decided to diversify and offer more models for sale. The car industry now offers several models and the consumers have the choice of a larger number of better quality models. We thus see that the consumers (as far as product choice and product quality are concerned) have benefitted from the removal of the market controls.

Scooter Industry:

The consumers also benefitted in the scooter industry from the removal of the market controls. As a result of the easing of quantity restrictions the consumers

had access to products of international quality.⁵⁵ Lag time before the delivery of a scooter is practically non-existent (except for a couple of BAL models). We thus see that the consumers are definitely better off after the removal of the market controls.

6.2.2. The Producers in the Car and the Scooter Industry

Car Industry:

In the car industry we see that market competition forced the producers to be competitive and more efficient.⁵⁶ Entry into the market indicates that there was room in the market for more manufacturers (most of the incumbents have not exited the market). It seems that the producers also benefitted from the removal of the market controls, as the market controls forced them to be efficient. (Though, the earlier incumbents definitely lost from the easing of the market controls as they lost their market share to the entrants.)

Scooter Industry:

The scooter industry saw large entry due to the easing of the market controls. The earlier incumbents witnessed a percentage decrease in their market share, however, the number of units they sold (except API) did not decrease. The industry now offers several good quality products. Competition has forced the

⁵⁵ The car market now has scooters made by Honda (Japan) and Piaggio (Italy).

⁵⁶ PAL made profits in the fiscal year 1988-89 after being in red for several years. India Today, Nov. 15, 1989.

manufacturers to be innovative and competitive (one sees that the scooter prices of all the models are close to each other). Overall, the scooter industry has benefitted from the easing of the market controls.

One interesting question emerging out of all of this is that why would the industrialists, especially in the car industry, support deregulation? This can be looked at from two angles. First, in principle the government had agreed to stay out of the industry. However, the government was the first entrant into the car industry when it restarted the car company of (late) Mr. Sanjay Gandhi. They were not left with much choice as the new entrant, MUL, quickly stole a large chunk of the market share from the incumbents. Secondly, looking at an economy like India that has grown substantially since independence. We see that India had developed a substantially large middle class. The earlier controls could have been very restrictive such that the incumbents realized that profits would increase with expansion of capacities. Thus, one can argue that deregulation was also sought in their own self interest. The incumbents realized that the demand had shifted to the right substantially over the years.

7. Conclusion

Industrial policy in India was molded by the experience (of the Indians) with the British rule. As a result it was decided to erect entry barriers (such as, licensing) on, both internal and external trade. Evidence suggests that the

industrialists played a major role in the formulation of the industrial policy and were for the regulation of the Indian industry.

For the car and scooter industry the entry barriers (licensing) provided an umbrella for the incumbents. As a result the incumbents made no major effort to innovate or invent. The scooter industry had better quality products as the threat to entry was credible. After nearly three decades of protection the industry had outmoded products resulting from lack of technological advancement.

After the market controls were eased in both the industries product quality and product choice improved in both the industries. Both, the car and the scooter industry, witnessed dramatic technological changes (the latent incumbents were forced to improve upon their technology). Both the car and the scooter industry became competitive due to entry in the markets.

Looking at the gainers and the losers from the regulation, and the subsequent deregulation one sees that the consumers benefitted from the easing of the market controls. That is, product quality improved, product choice increased, and the waiting period for the delivery of the good (which was several years prior to deregulation) practically vanished. This also eliminated the parallel market for the car and scooter bookings (which were transferable). As a result premiums on most of the products have vanished. The consumers have definitely benefitted from the deregulatory process.

As far as the producers are concerned, deregulation removed the entry barriers. This resulted in entry, forcing the incumbents to become efficient. As a result some of the incumbents reduced wastes and improved industry performance. (For example, the PAL group has been in the red for several years. Recently, they made profits, and the turnaround is attributed to "overhaul upgrade and modernization of the key manufacturing facilities and products".)⁵⁷

⁵⁷ India Today, Nov. 15, 1989.

TABLE-1

EX-FACTORY NET DEALER PRICES FOR CARS								
	AMBASSADOR		PADMINI		MUL		MUL*	
	X-NDP	IND	X-NDP	IND	NDP	IND	X-NDP*	IND*
1965	11564	100	10068	100	.	.	.	.
1966	12775	110	11636	116	.	.	.	.
1967	13919	120	12664	126	.	.	.	.
1968	14021	121	12679	126	.	.	.	.
1969	14075	122	12660	126	.	.	.	.
1970	14075	122	14862	148	.	.	.	.
1971	15769	136	14862	148	.	.	.	.
1972	15896	137	15046	149	.	.	.	.
1973	15848	137	15556	155	.	.	.	.
1974	17250	149	17080	170	.	.	.	.
1975	22925	198	22211	221	.	.	.	.
1976	21536	186	22011	219	.	.	.	.
1977	22286	193	22895	227	.	.	.	.
1978	23986	207	24057	239	.	.	.	.
1979	27667	239	26397	262	.	.	.	.
1980	30362	263	34803	346	.	.	.	.
1981	38062	329	40815	405	.	.	.	.
1982	48587	420	44577	443	.	.	.	.
1983	48587	420	47583	473	47500	100	41304	100
1984	48587	420	46080	458	49383	104	43141	104
1985	51787	448	49932	496	50325	106	44071	107
1986	59547	515	54300	539	59617	126	47221	114
1987 ¹	62709	542	56945	566	72050	152	57069	138

1988	65872	570	59590	592	75235	158	59592	144
1989	73070	632	70414	699	86446	182	63380	153

* The price available from MUL was the net-dealer price (NDP) inclusive of excise. The ex-factory NDP (X-NDP) computed here is an obtained from the NDP less excise duty.

1. 1987 prices for Ambassador and Padmini are average of 1986 and 1988 due to non availability of NDP for 1987.

TABLE-2
EX-FACTORY NET DEALER SCOOTER PRICES

YEAR	<u>BAL</u>		<u>API</u>	
	NDP*	INDEX	NDP*	INDEX
1965	1960	100	1955	100
1966	1968	100	2042	104
1967	2263	115	2275	116
1968	2280	116	2238	114
1969	2280	116	2238	114
1970	2280	116	2230	114
1971	2280	116	2230	114
1972	2280	116	2230	114
1973	2280	116	2304	118
1974	2306	118	2605	133
1975	2880	147	3365	172
1976	2976	152	3565	182
1978	3054	156	3506	182
1979	3077	157	4066	179
1980	3560	182	4926	208
1981	3885	198	5211	252
1982	4560	233	5726	267
1983	5100	260	5726	293
1984	5280	269	5827	293
1985	5540	283	6227	298
1986	6000	306	7250	319
1987	6490	331	7250	371
1988	6960	355	7250	371

* ex-factory net dealer prices.

TABLE-3

PRODUCTION OF CARS - BY MAKE

YEAR	HML(P)	PAL(P)	SAL(P)	SMPI(P)	MUL
1950	1469	478	.	274	.
1951	2161	703	.	614	.
1952	1185	522	.	386	.
1953	1847	344	.	301	.
1954	2607	1413	.	975	.
1955	4874	3581	.	1546	.
1956	5781	5722	.	1836	.
1957	5086	4866	.	2251	.
1958	4809	1843	.	1462	.
1959	5745	4459	.	1789	.
1960	9217	6516	.	3364	.
1961	11056	7197	.	3409	.
1962	13438	6247	.	3641	.
1963	8621	3750	.	3340	.
1964	15351	3868	.	4008	.
1965	15558	5673	.	3559	.
1966	19469	7030	.	1098	.
1967	20515	10055	.	2774	.
1968	22687	12276	.	2345	.
1969	21560	12218	.	1405	.
1970	22703	12054	.	448	.
1971	24656	12821	.	827	.
1972	24634	13611	.	583	.

1973	25440	13883	.	614	.
1974	20129	14213	.	1666	.
1975	9322	13630	.	123	.
1976	16422	14973	54	161	.
1977	20256	17481	171	111	.
1978	20987	12931	331	117	.
1979	17523	11550	106	56	.
1980	21752	8729	51	6	.
1981	23197	18874	31	4	.
1982	21836	20711	126	1	.
1983	23631	20929	302	1	175
1984	22127	26620	930	.	11876
1985	22238	29223	523	11	34825
1986	22387	28501	1557	1557	63504
1987	25561	31191	484	484	90909

TABLE-4

PRODUCTION OF SCOOTERS BY MANUFACTURER AND BRAND

YEAR	API	MAC	LAMBY	APSL	ASVL	BAL	EIL
1955	.	529	.	.	.	.	.
1956	.	3068	.	.	.	.	.
1957	.	4098	.	.	.	.	.
1958	.	2923	.	.	.	.	.
1959	.	2764	.	.	.	.	.
1960	.	9459	.	.	2535	.	.
1961	.	8071	.	.	4746	.	.
1962	.	9589	.	.	4368	361	.
1963	.	8632	.	.	6148	739	.
1964	.	10412	.	.	8339	1292	.
1965	.	10143	.	.	8376	1795	.
1966	.	8632	.	.	10389	1950	.
1967	.	13270	.	.	15982	1050	.
1968	.	16367	.	.	19040	545	.
1969	.	22372	.	.	26431	377	90
1970	.	25335	.	.	32091	199	767
1971	.	24504	.	.	39798	50	2828
1972	.	20851	.	.	40332	80	3468
1973	1225	23543	.	.	50361	24	2929
1974	5008	24404	.	.	55126	1	1141
1975	.	29754	.	.	54495	.	538
1976	1550	31436	3663	28	76138	.	680
1977	1326	20284	8281	675	68349	.	552

1978	969	25753	9503	884	49003	.	361
1979	1001	25337	9453	.	30289	.	.
1980	874	22531	10564	.	71682	.	.
1981	1579	19705	10580	.	84170	.	.
1982	1248	22834	10394	.	136020	.	.
1983	88	14414	5312	.	167179	.	.
1984	249	9446	5345	.	186773	.	.
1985	51	7053	23353	.	258967	.	.
1986	.	5275	11572	.	366807	.	.
1987	.	209	931	.	415968	.	.

Table-4 contd.

YEAR	LAMBRETTA						
	GSIC	KSL	MSL	PSL	VIJAI	CENTO	WBSL
1971	21	.	.	.	.	.	.
1972	100	.	.	.	.	.	.
1973	.	.	.	.	.	.	.
1974	2	.	.	.	.	.	.
1975	131	.	.	.	10595	.	.
1976	332	137	4434	1	28054	.	7
1977	192	3362	23199	2016	16489	.	720
1978	177	3325	28193	2281	18985	.	.
1979	763	2873	19491	.	32485	.	.
1980	3417	1374	25006	.	36195	.	.
1981	5953	1098	24546	.	32373	.	.
1982	4131	729	32597	.	36813	1061	.
1983	3857	45	53482	.	18443	8480	.
1984	4906	.	56337	.	19554	4471	.

1985	1659	.	58650	.	28865	1324	.
1986	.	.	90739	.	6060	354	.
1987	.	.	92732	.	1288	41	.

Table-4 contd.

YEAR	VESPA(LML)	KH
1983	250	.
1984	10222	.
1985	41359	.
1986	101558	12769
1987	72292	21836

TABLE-5

ENTRY AND EXIT IN THE SCOOTER INDUSTRY

FIRM ENTRY* / EXIT#		BRAND	
¹ Automobile Products of India Ltd.	Lamby	1955	-
¹ Bajaj Auto Limited	Vespa/Bajaj	1960	-
Enfield India Limited	Fantabulus	1962	1975
Escorts Limited	Rajdoot	1969	1979
Girnar Scooters Limited	Girnar	1971	1986
Automobile Products of India Ltd.	Mac.	1973	1986
¹ Scooters India Limited	Vijai	1975	-
¹ Andhra Pradesh Scooters Limited	Pushpak	1976	-
Aravali Svachalit Vahan Limited	Aravali	1976	1979
Karnataka Scooters Limited	Falcon	1976	1984
¹ Maharashtra Scooters Limited	Priya	1976	-
West Bengal Scooters Limited	Digvijai	1976	1978
Punjab Scooters Limited	Kesari	1977	1979
¹ Scooters India Limited	Cento	1982	-
¹ Lohia Motors Limited	XE100cc	1983	-
¹ Kinetic Honda	-	1986	-
² Kelvinator of India Limited	-	1984	-
^{1 2} Gujarat Narmada Auto Limited	Narmada 150	1986	-

* Year production started.

Year production stopped. This information is as of 1988.

1 Listed in Automotive Buyers Guide, ACMA, 1989. That is, these companies are currently (as of 1988) producing.

2 No output data currently available.

TABLE-6

TOTAL PRODUCTION OF CARS AND SCOOTERS

YEAR	CARS	SCOOTERS
1950	2221	-
1951	3478	-
1952	2093	-
1953	2492	-
1954	4995	-
1955	10001	529
1956	13339	3068
1957	12203	4098
1958	8114	2923
1959	11993	2764
1960	19097	11994
1961	21662	12817
1962	23326	14318
1963	15711	15519
1964	23277	20043
1965	24790	20314
1966	27597	20971
1967	33344	30302
1968	37308	35952
1969	35183	49270
1970	38828	58392
1971	38304	67201
1972	38828	64831

1973	39937	78082
1974	36008	85682
1975	23075	101763
1976	31610	151309
1977	38019	160295
1978	34366	168033
1979	29235	152951
1980	30538	209943
1981	42106	202884
1982	42674	250727
1983	45090	273850
1984	64013	297303
1985	102456	422307
1986	116004	595150
1987	148495	625667
1988	159841	659810

Table-7

SCHEDULE OF INDUSTRIES

SCHEDULE-A:

1. Arms and ammunition and allied defense equipment.
2. Atomic Energy.
3. Iron and steel.
4. Heavy castings and forgings of iron and steel.
5. Heavy plant and machinery required for iron and steel production, for mining, for machine tool manufacture, and for such other basic industries as may be specified by the government.
6. Heavy electrical plant including large hydraulic and steam turbines.
7. Coal and lignite.
8. Mineral oils.
9. Mining of iron ore, manganese ore, chrome ore, gypsum, sulphur, gold, and diamond.
10. Mining and processing of copper, lead, zinc, tin, molybdenum, and wolfram.
11. Minerals specified in the schedule to the Atomic Energy (Control of Production and Use) Order, 1953.
12. Aircraft.
13. Air transport.
14. Railway transport

Table-7 continued-

15. Shipbuilding.
16. Telephone and telephone cables, telegraph, and wireless apparatus (excluding radio receiving sets).
17. Generation and distribution of electricity.

SCHEDULE-B:

1. All other minerals except "minor minerals" as defined in Section 3 of the Minerals Concession Rules 1949.
2. Aluminum and other non-ferrous metals not included in Schedule-A.
3. Machine tools.
4. Ferro-alloys and tool steels.
5. Basic and intermediate products required by chemical industries such as the manufacture of drugs, dye-stuffs and, plastics.
6. Antibiotics and other essential drugs.
7. Fertilizers.
8. Synthetic rubber.
9. Carbonization of coal.
10. Chemical pulp.
11. Road transport.
12. Sea transport.